

fore here bilobed and, as it were, composed of two ovules placed side by side and similar in form and organization.

To this first phase others soon succeed which reveal to us the function which these two vesicles are destined to fulfil. Each of these vesicles soon becomes enveloped by fine globules, which make their appearance successively. But whilst round one of them the globules remain very small, retain nearly the same volume throughout, and seem to have a limited multiplication, round the other vesicle they present themselves of very different sizes, gradually increase, and become more and more abundant as the ovule approaches maturity.

That lobe of the ovum in which this increase in the number and volume of the primitive elements takes place necessarily undergoes proportionate modifications; it enlarges for the reception of the materials which increase in it, just as the vitelline membrane of the bird's egg enlarges in proportion as the vitellus is formed, and it finally acquires such a predominance that the other lobe, the development of which has remained in a manner stationary, only forms at one of the poles of the ovule a little prominence like that which is produced in the ovum of osseous fishes in consequence of the condensation of the vitellus.

Such is the appearance presented by the mature ovule of the *Sacculina*. As to its organization, it only differs from the very small ovules by the intervention in unequal proportions of two distinct elements. The predominant element, formed by a mass of large and small globules, in the midst of which one of the primitive vesicles always shows itself, is, there is no doubt, the analogue of the yolk of the bird's egg—that is to say, the material destined for the nourishment of the future embryo; whilst the restricted disk, situated on the periphery of the ovum and composed of very small granules grouped round the other primitive vesicle, evidently represents the cicatricula of birds—that is to say, the essential and fundamental portion of the ovum, of which the materials are directly employed in the formation of the new creature.

The study of the ovule of the *Sacculina*, therefore, gives us the signification of the two vesicles which are contained in the ova of certain species; we may even say that in this case the demonstration is complete, for we may follow the phenomenon in all its phases. One of these vesicles is the formative centre of the germinative element, and must retain the name of *germinal vesicle* under which it is already known; the other is merely the formative centre of the nutritive element.—*Comptes Rendus*, February 22, 1869, tome lxxviii. pp. 460–462.

Euplectella.

Dr. C. Claus, the Professor of Zoology and Director of the Zoological and Zootomical Institute of Marburg, has published an essay on *Euplectella aspergillum* in quarto, with a beautiful photographic illustration representing two varieties of this sponge, and three copper-plates of the spicules of which it is formed. Dr. Claus states that the

spicules are composed of numerous concentric coats ; and in one figure he represents the fracture as produced in the centre, showing about six thick layers, each shorter than the preceding ; but all the other breaks are represented short, straight or oblique, like a broken glass rod. The short reflexed hooks on the surfaces of the elongated spicules at the root of the sponge are formed by folds of the siliceous lamina.

He describes the network as formed of more or less elongated spicules united by a siliceous cement, which, like the spicules, is deposited in laminae.

Dr. Claus's plates show that the spicules of this sponge are formed of concentric laminae as are the spicules of *Hyalonema*—which, I believe, has not before been observed ; and at the same time he shows that the spines on the surface of the spicules are formed in a very different manner from the ring of spines on the spicules of that genus.—J. E. GRAY.

Sea-Pools in the Friendly Islands.

By Dr. HARVEY.

“I walked out on the coral-reef opposite the landing-place [at Tongataboo]. It fringes the whole north side of the island, in some places extending a mile or more from the beach. A great part of the surface was worn and dead, but in the pools the coral was alive. Near the margin of the reefs these pools were numerous and deep, and in them many beautiful corals were growing luxuriantly. They were various—some branching or leafy, others knobby or massive, some bushy, some tree-like, or saucer-shaped or huge disks, some sessile, others on stems. The colours varied from white to brown, purple, green, yellow, flesh-colour, and dull red ; and many reflected rainbow-tints changing with the angle, particularly at the tips of the branches. The water was clear as air ; and through it multitudes of little sapphire fishes (Coloto) darted among the coral-branches. Seaweeds were very few, and almost all of the green order, among which were *Halimedeæ* and *Bryopsis*. Starfishes of the long-armed class, *Ophiura* and *Ophiocoma*, were abundant ; and a large brown feather-star was frequent under stones. Great, black, ugly sea-cucumbers (*Holothuria* or Trepang) were crawling everywhere ; I caught at one, which immediately threw out multitudes of long, blue, shiny, slimy threads, that coiled round my fingers : I dropped the brute, but had some difficulty in getting my hand free ; it did not sting me, however. I picked up a *Cidaris* and an *Echinus* (Urchin), and saw another species of the latter, which I did not venture to touch, remembering how I had been stung by one (I think the same species) at Key West. It has long, slender, and very brittle spines, covered with highly poisonous slime. Near the edge of the reef Nullipores abound, in places left bare at low water. I noticed that some of the living corals were bare also ; but probably they did not long remain so, for it was a low spring tide.

“A huge and beautiful species of *Acyonium* (a soft coral called ‘dead-man’s toes’) grew where it was left exposed at low water.